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Characteristics of the arp protein

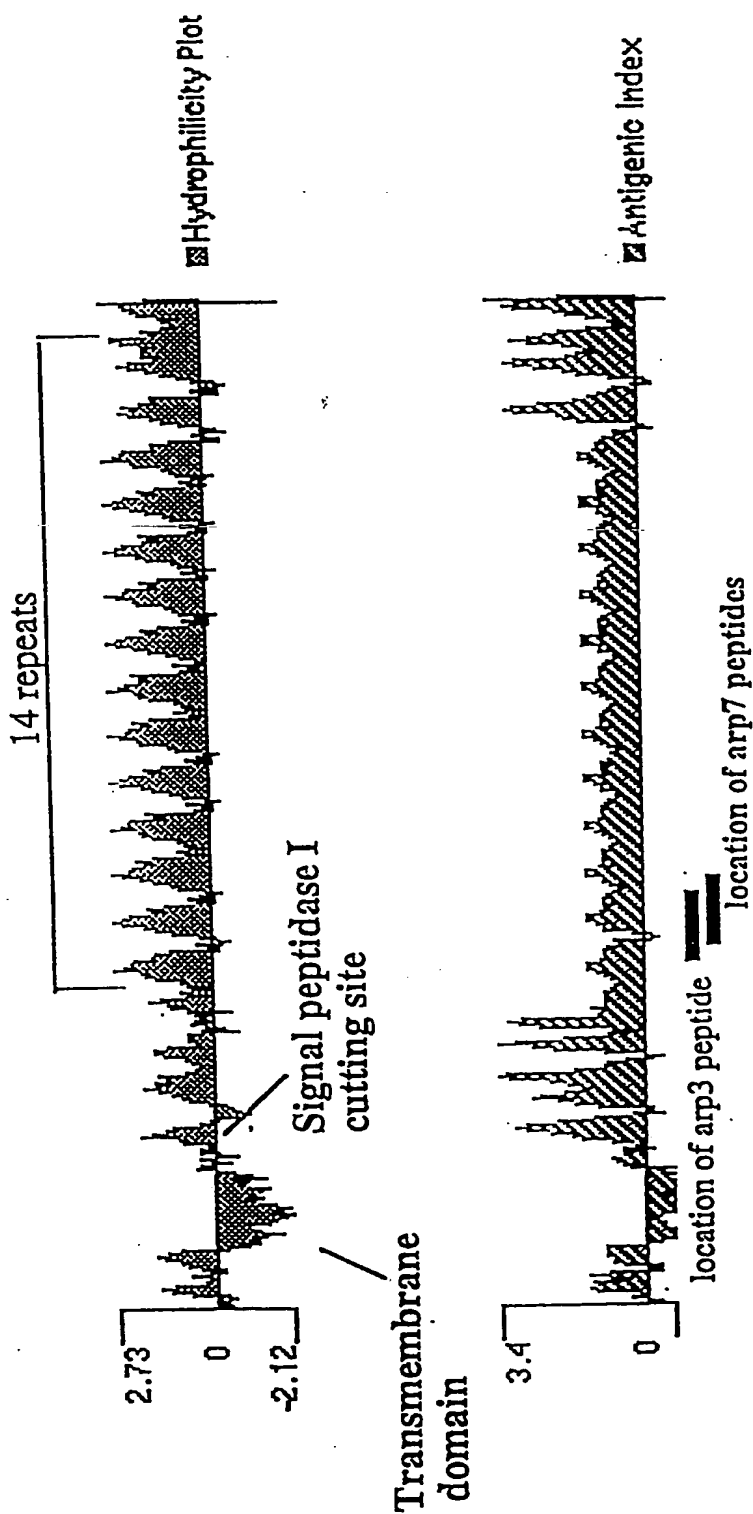


FIGURE 2

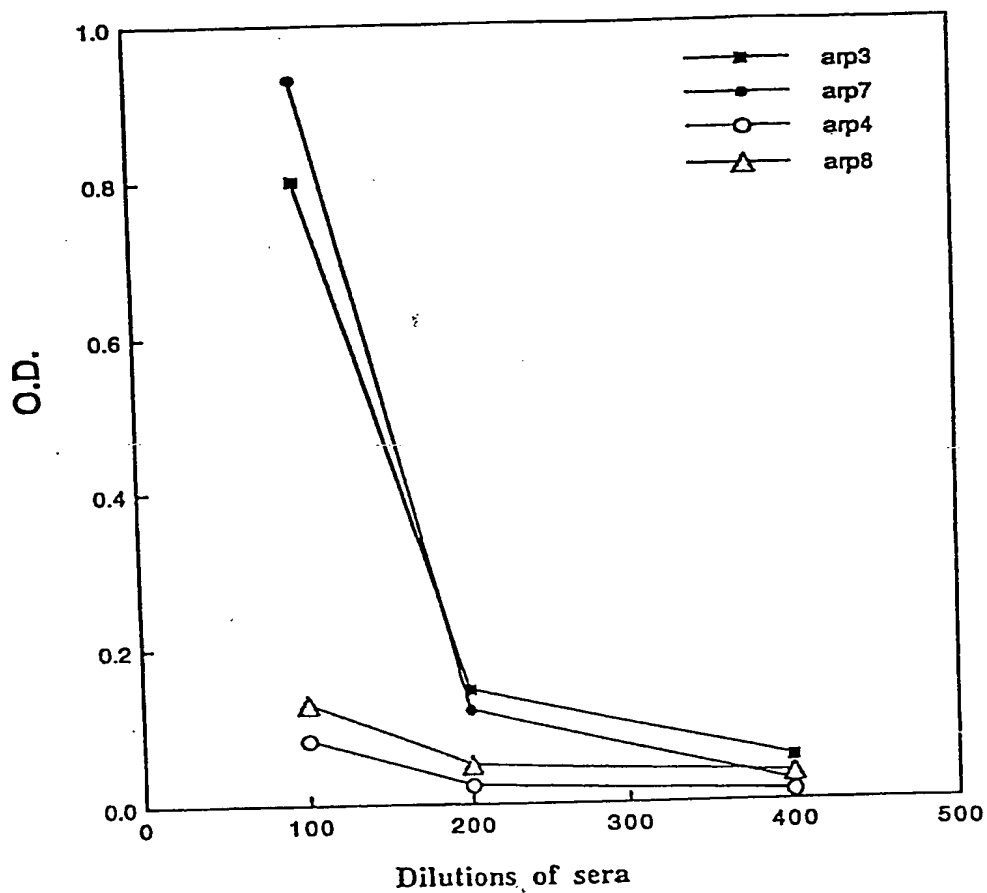


FIGURE 3

Detection of anti-arp antibody
in human serum using peptide arp#3

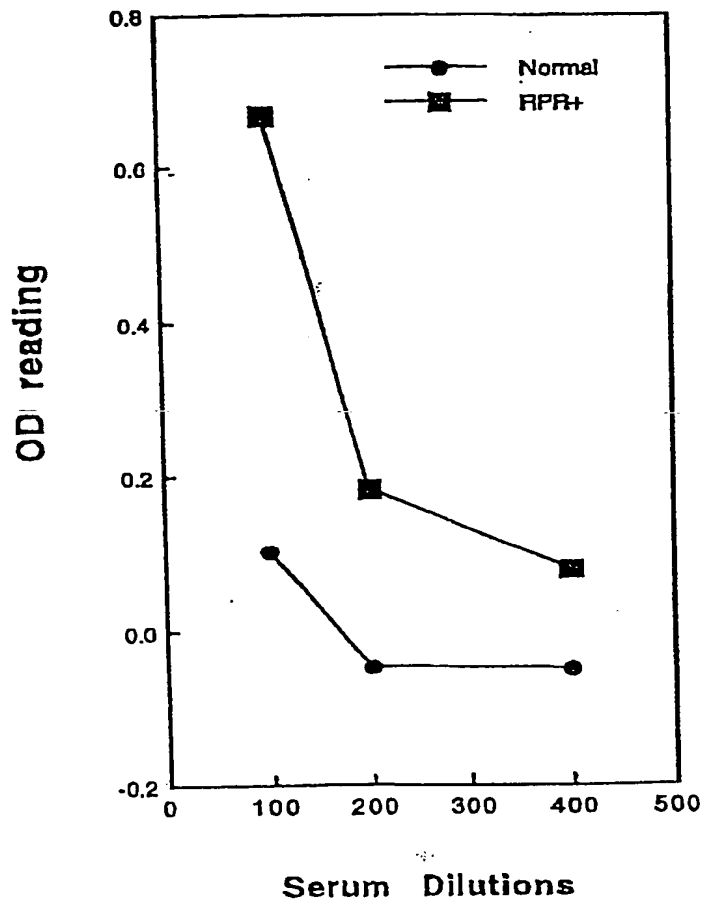


FIGURE 4

GTGATGAC AGCTGACGCT CTCAGGTCTT GCACATATTG CGGGCTGGT GCCGACATCT
CTCCTGCCAC CTGCTACAGT GTCAGGTTCA TCGGGGAATT GAGGAACTG TTATCOGCGC
TCCCCATCTT CCGATACTGG ATCGGTGTGG GGGGGAGTAG GAGTGGGGAA GCGTCTGTGC
TGATCGCGC TGGTGATGG CGCGTTCTGG TACCTCAGT CGAAGGGAGT CAGTATCGCT
TACGTGCCCG TTCATCGCAG TGGGGGCTCT CAAGATTGCA GCATGAGCAC AGCAGTGGGC
GATAOGCTOC TTAACGCCCT CTTCGACGAG GGAATGGTGG TTACGGCAGT AOCGCCGGT
GTACACGACG GCCAGACTAT AGCAGAAATT GCTGCATGTT TTGAAGTAAT GCCCGATTAC
GCGTGTGTGG TGCAGTTTCA TTCCGCTCGT CTCCTGTGGT GGGAAAGCCC TACCTCCCGT
GCCCCGGGGC CTGGTCTTC AGAGAGGTTT CBTGCTGTG GGACATTAGT GGATTTGCAT
ACGACGCGCG CGTGTGCTA TCGTGTGTC GCCCATACA GGGAGAGTAT TCCCGTTTCT
GAGTGTGTTG AGTCTGTTAC CCGTTGTATT GCGGAGCAGG CAATTCGTA CATAOGGGTG
GGCACGAGCA CCGATACAGC CGGAGTTCAG TTATAGAAAA TAGGGAATAC GTAAGGTGTC
TGACGCGTCG CTTGAGCTGG GAGGAGTCTT ATGATTAAAC GCCACATGTT CGCAAAAAGG
GGTGTCAAAG GAAGATCTTA CCTGGTTAGG GTGAACACTG CGTTCCTAGT GCTTTGTGTT
GCTTCTGTCA CGCGCTTTG GGCTGTGTGG GAAGGGAATG CAGAAATTGG CCCCCAGGGA
AGTTTCTGC AGGACGGC

[illegible]

GG GGGAACTCC CTTTACGCTC CCTGACCTAT CCGAGTCAGA AATTGTGTTT CCGGAGGAAC
AGAAAGGACG TCGCATCCC CAGGTGATAC CCGAGGGTGC GCCACGTGGA CTGCAACCTG
GTGAATACTA CGTACAGATT GCAGTCTTTC ATGACGCTAT CCAGGTGCAG AGCATTGTCC
ACCGTTACGG GGTAGAATAC CCCATCGCAG TGGAGCAGGA CATCCATGAA GGTAAGGTGC
TTTTACCCTT ATGCGTCGGT GCTGTCCTTTC TGAACGAGCA CGGCGCGGTA CTAGAGAACT
TCCAAAGGTT TGATTCAAG CACGCTCTTTC TGAAGGAGGC GCGATGATCA GGTCGGCCT
CCTCTTCCC TCGTGACCGT GGTGACTGCG CCGAAGGGG GCGCACAGAG CCGAAGGAA
CGGAAGGGAA GGGGCAGACT TAACTATTTC TTTGTTTTT TGAGCACGTA AAACGGCGCC
ATCTCCTTG AAGGCTTTTC TGCGCGGGA GCGCCATGT AGCGAACGGA GTTACTGTCT
ATCAGCTTGT ACAGCTCTTT CTGTCGGGT GCCTTCGATT GCTCCAGGA CACAAGGAG
AGTTCGACAA TTCGTCTTC ACGTACCATC CACGTACCGC GATACCTAAG AGGAGAAGGT
GCCGACTTCT TCTCAAGGGC AAGCTCTACC TTTTGCAG TGCATCCGC GTTGACGTC ACAGTC

FIGURE 5

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T. pallidum ssp. *Pertenue* (CDC-2) nucleotide sequence

ATGTTTGTGC	GCAGTGACAT	GTTCCCCAAA	AACACTGCTG	TTGAAATTAG
CAACTTAGAA	AAGAA TGCCA	AGGCTCAGGC	AGTGGTTATT	GGGCACGCAG
GGATCCCCCG	TCTTCTAGTT	AGCCTTGAC	CCGCTGCTGC	AGCACAGCTT
GGGATTGGCG	TATACCAAGC	TGTGCGTGTA	CGCGTACGTA	CCTTGGGTAC
CGTGCGCGGT	GGGTCTCAAA	CAAGTCAGGA	CGGACTGTCC	CTTGCACTCT
TGCCGTCCCG	TGTGCCTGCG	CGCCCCCGCG	AGCGTGATCC	TCTGTATCC
CCGCCCGGCAG	GTCACACTGT	ACCGGAATAT	CGCGATACGG	TTATTTCGA
TGACCCGCGT	TTGGTTTCCC	CTTTGTCTCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGGA	GCCGGCCTCT
GAGCGTGAGG	GAGGGGAGCG	TGAGGTGGAG	TCTCAGCATA	CGAAGCAGCC
ATCCCACTCG	GTTTCCAACT	CAGCTCCCAA	TCAGTTTCGG	AAACCCCTGA

FIGURE 7

T. pallidum ssp. *Pertenue* (CDC-2) *arp* protein sequence

MFVRS DMFPK NTA VEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAQQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSR

EVE DVPKVVVPAS EREGGER
EVE DVPKVVVPAS EREGGER
EVE DVPKVVVPAS EREGGER
EVE DVPKVVVPAS EREGGER

EVA SQHTKQPSHS VSNSAPNQFR KP

FIGURE 8

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T. pallidum ssp. *endemicum* (Bosnia) nucleotide sequence

ATGTTGTGC	GCAGTGACAT	GTTCCTCCCAA	AACACTGCTG	TTGAAATTAG
CAACTTAGAA	AAGAATGCCA	AGGCTCAGGC	AGTGTTATT	GGGCACGCAG
GGATCCCCGG	TCTTCTAGTT	AGCCTTGAC	CCGCTGCTGC	AGCACAGCTT
GGGATTGGCG	TATACCAAGC	TGTGCGTGT	CGGTACGTA	CCTTGGGTAC
CGTGCGCGGT	GGGTCTCAA	CAAGTCAGGA	CGGACTGTCC	CTTGCACTCT
TGCCGTCCCG	TGTGCTGCG	CGCCCGCGC	AGCGTGATCC	TCTGTATCC
CCGCCGGCAG	GTCACTACTGT	ACCGAATAT	CGGATACGG	TTATTTTGA
TGACCCGCGT	TTGGTTTCCC	CTTGTCTCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT
GAGCGTGAGG	GAGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGA
GCCGGCCTCT	GAGCGTGAGG	GAGGGAGCG	TGAGGTGGAG	GACGTGCCGA
AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGAGCG	TGAGGTGGAG
GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG	GAGGGAGCG
TGAGGTGGAG	GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT	GAGCGTGAGG
GAGGGAGCG	TGAGGTGGAG	GACGTGCCGA	AGGTAGTGA	GCCGGCCTCT
GTTTCCAAC	CAGCTCCCAA	TCAGTTTCGG	AAACCTGA	

FIGURE 9

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T. pallidum ssp. endemicum (Bosnia) arp protein sequence

MFVRSDMFPK NTA VEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSR

EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER
EVE DVPKVVEPAS EREGGER

EVA SQHTKQPSHS VSNSAPNQFR KP

FIGURE 10

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arp #1
SEQ ID NO: 7 LVSP L REVEDAPKVVEPAS-

arp #2
SEQ ID NO: 8 -SR-EVED APKVVEPASEREGG-

arp #3
SEQ ID NO: 9 -PK VVEPASEREGGEREVEDA-

TP-arp #4
SEQ ID NO: 10 PKNTAVEISNLE KNAKAQAVV

TP-arp #5
SEQ ID NO: 11 GHAGIPGLLV SLAPAAAAQLGIGVY

TP-arp #6
SEQ ID NO: 12 VPA RPAQRDPLSS PPAGHTVPEY RD

TP-arp #7
SEQ ID NO: 13 VVEPAS EREGGEREVE DVPKV

TP-arp #8
SEQ ID NO: 14 VVEPASGHEGGEREVA SQHT KQPSHS

TP-arp #9
SEQ ID NO: 15 EVEDVPKVVEPASEREGGER

TP-arp #10
SEQ ID NO: 16 EVENVPKVVEPASEREGGER

TP-arp #11
SEQ ID NO: 17 EVEDAPKVVEPASEREGGER

TP-arp #12
SEQ ID NO: 18 EVEDVPGVVEPASGHEGGER

FIGURE 11

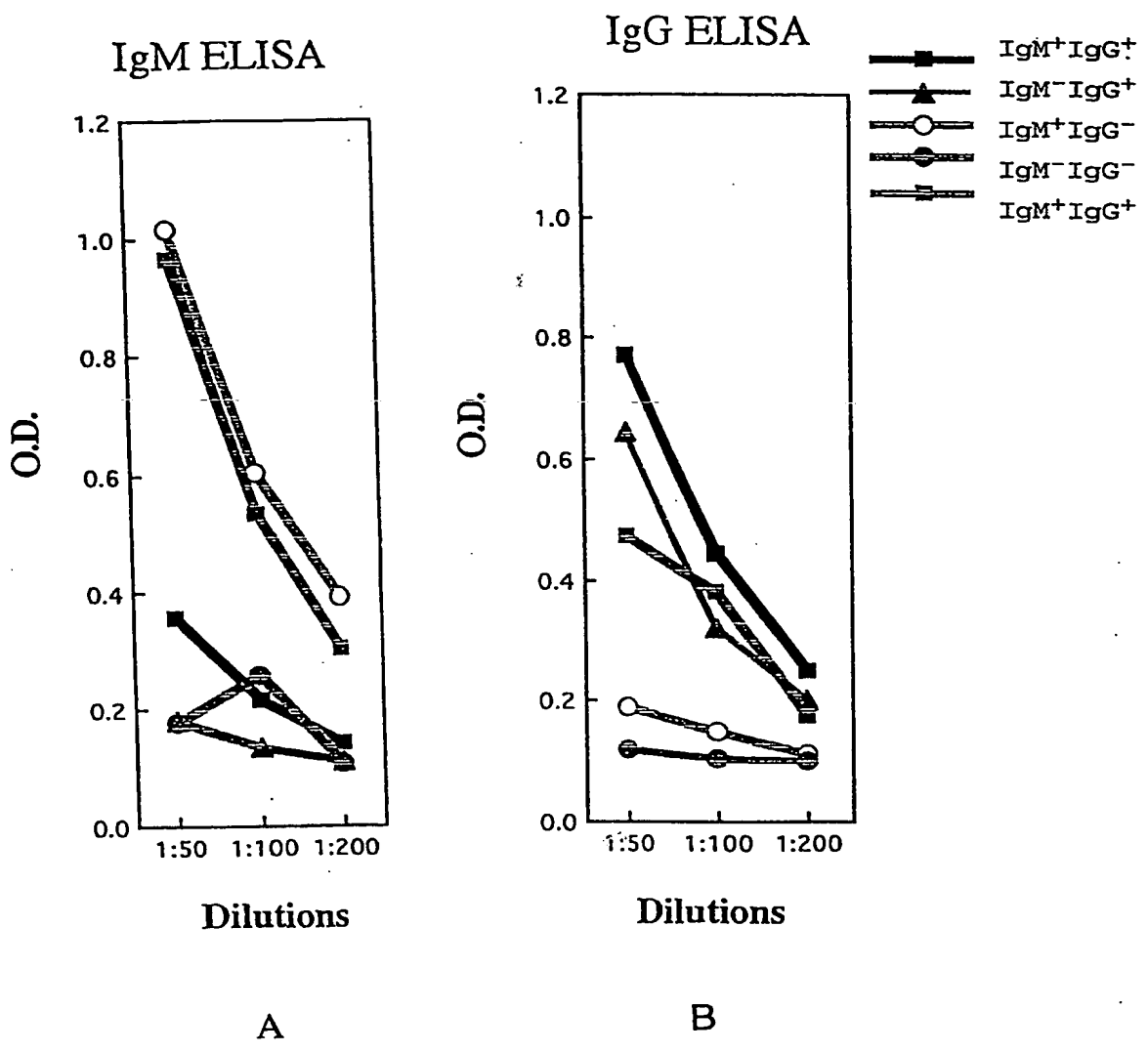


FIGURE 12

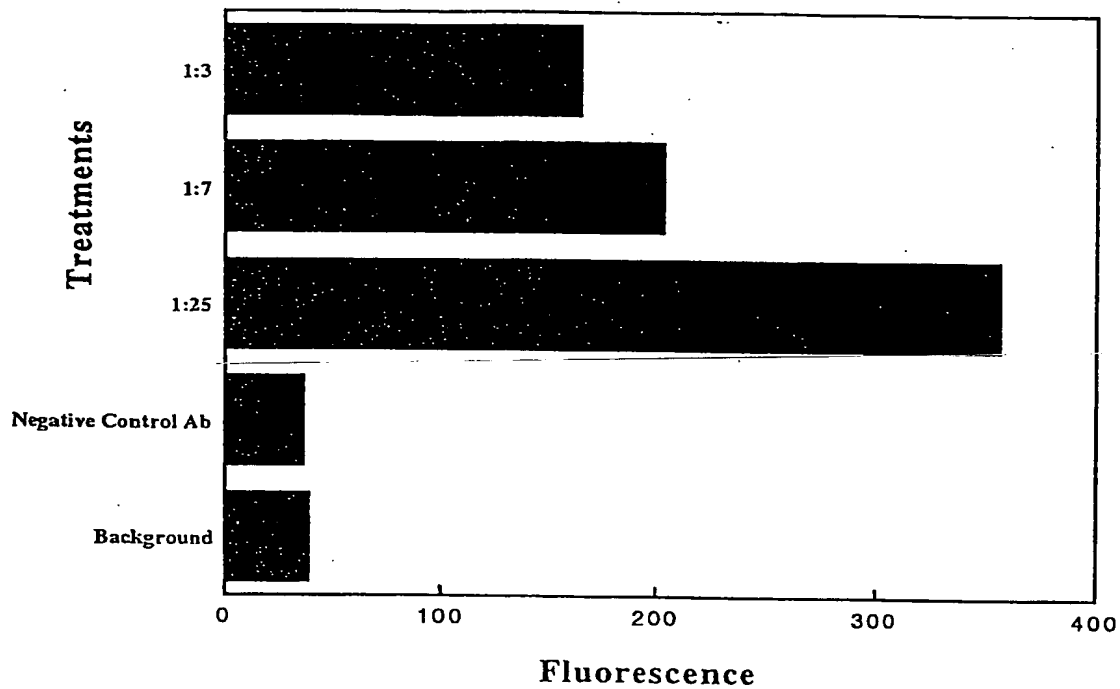
Flowcytometry analysis of arp 9

FIGURE 13

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FIG. 14

T. pallidum subspecies. *pallidum*, Nichols strain

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLS

REVEDAPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDAPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPGVVEPASGHEGGE
REVEDVPGVVEPASGHEGGE

Type I: 1, 2, 4, 7, 8
Type II: 3, 5, 6, 9, 10, 11, 12
Type III: 13, 14

REVA SQHTKQPSHS
VSNSAPNQFRNPEGELPFTLPDLSESEIVVPEEQKGRAHP
QVIPEGAPRG LQPGEYYVQI AVFHDAIQVQ SIVHRYGVEYPIAVEQDIHE
GKVRFTVCVG PVQKDERGAV
LENFQRFQFK DAFLKKAR

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FIG. 16

T. pallidum subspecies *endemicum*, Bosnia strain

MFVRSDFMPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLS

REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE
REVEDVPKVVEPASEREGGE

REVA SQHTKQPSHSVSNSAPNQFR NPEGELPFTL PDLSESEIVV
PEEQKGRAHP
QVIPEGAPRGLQPGEYYVQI AVFHDAIQVQ SIVHRYGVEY PIAVEQDIHE
GKVRFTVCVGPVQKDERGAV LENFQRFGFK DAFLKKAR

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FIG. 17

T. pallidum subspecies. *pertenue*, CDC-1 strain

MFVRS DMFPK NTAVEISNLE KNAKAQAVVI GHAGIPGLLV SLAPAAAAQL
GIGVYQAVRV RVRTLGTVRG GSQTSQDGLS LASLPSRVPA RPAQRDPLSS
PPAGHTVPEY RDTVIFDDPR LVSPLSREGGE

REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE
REVEDVPKVV EPASEREGGE

REVASQHTK QPSHSVSNSA PNQFRNPEGE LPFTLPDLSE SEIVVP EEQK
GRAHPQVIPE GAPRGLQPGE YYVQIAVFHD AIQVQSIVHR YGVEYPIAVE
QDIHEGKVRF TVCVGPVQKD ERGAVLENFQ RFGFKDAFLK KAR